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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,686	04/01/2004	Kcn L. Chang	K35A1433	9721

35219 7590 04/11/2007
WESTERN DIGITAL TECHNOLOGIES, INC.
ATTN: RENEE FRANKS
20511 LAKE FOREST DR.
E-118H
LAKE FOREST, CA 92630

EXAMINER

KAYRISH, MATTHEW

ART UNIT PAPER NUMBER

2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,686	CHANG ET AL.	
	Examiner	Art Unit	
	Matthew G. Kayrish	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Affidavit filed on 2/8/2007 under 37 CFR 1.132 is not sufficient to overcome the reference, Chang et al (US Patent Number 7092216). Applicant (the four inventors of this application) has not shown that they are the applicant of the applied patent-Chang et al. (See MPEP 715.01(a))

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al (US Patent Number 7092216), in view of Hong et al (US Publication Number 2003/0197980).

Regarding claims 1, 4 and 17, Chang et al disclose:

A disk drive comprising:

An actuator rotatably coupled (figure 8, via item 34) to the disk drive base (figure 8, item 16), the actuator comprising:

An actuator body formed of an integrated stamped material (column 4, lines 18-21), actuator body including:

A main body section (figure 7, area circulating items 225 & 240) defining a horizontal plane orthogonal to an axis of rotation (figure 7, the actuator body defines a horizontal plane);

An actuator arm extending from the main body section (figure 7, items 204 & 206);

Two support extensions (figure 7, items 205 & 207 on both sides) extending from the main body section opposite the actuator arm, the support extensions cooperatively forming a channel between the support extensions (figure 6, support extensions define a channel); and

A coil support tab disposed adjacent the support extensions and extending orthogonal to the horizontal plane (figure 6, items 209 & 215).

Chang et al fails to specifically disclose:

Two parallel support extensions; and

A vertical coil defining a coil plane disposed orthogonal to the horizontal plane, the coil being disposed in mechanical communication with the support extensions and the coil support tab for supporting the coil within the channel.

Hong et al disclose:

Two parallel support extensions (figure 6, items 40 are parallel); and

A vertical coil defining a coil plane disposed orthogonal to the horizontal plane (figure 6, item 42), the coil being disposed in mechanical communication with the support extensions and the coil support tab for supporting the coil within the channel (figure 6, item 40 supports the coil).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Chang et al with a vertical coil and parallel support portions, as taught by Hong et al, because a vertical coil of a VCM is a well known equivalent in the art. Moreover, by making Chang et al's coil of the form of Hong et al's, the voice coil would be in communication with the tabs, as shown by Chang et al in figure 7.

Regarding claim 2, Chang et al fails to specifically disclose:

Wherein the actuator body is formed of a single integrated piece of material.

Hong et al disclose:

Wherein the actuator body is formed of a single integrated piece of material (figure 6, item 26 is one piece).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the actuator body of Chang et al out of a single integrated piece, as taught by Hong et al, because this would make assembly easier.

Regarding claim 3, Chang et al disclose:

The actuator of claim 1, wherein the coil support tab is integrally formed with the main body section (figures 6 & 7).

Regarding claim 5, Chang et al disclose:

The actuator of claim 1, wherein the actuator body is formed of a sheet metal material (column 4, lines 18-21).

Regarding claim 6, Chang et al disclose:

The actuator of claim 1, wherein the coil support tab extends from the main body section (figures 6 & 7).

Regarding claim 7, Chang et al disclose:

The actuator of claim 1, wherein the coil support tab is disposed between the support extensions (figures 6 & 7).

Regarding claim 8, Chang et al disclose:

The actuator of claim 1, wherein the coil support tab is bent from a position between the support extensions within the horizontal plane (figures 6 & 7, support extensions are bent from plane).

Regarding claim 9, Chang et al disclose:

The actuator of claim 1, wherein the coil includes a pair of opposing primary legs (figure 7, right & left sides of coil) and pair of opposing secondary legs respectively disposed between the primary legs (figure 7, front & back of coil), a respective one of the primary legs is disposed in mechanical communication with the support extensions within the channel (figure 7, communication via adhesive [228 & 230]), a respective one of the secondary legs is disposed in mechanical communication with the coil support tab (figure 7, communication via adhesive [232]).

Regarding claim 10, Chang et al disclose:

The actuator of claim 8, wherein the respective one of the secondary legs includes a radially exterior surface disposed in mechanical communication with coil support tab (figure 7, the exterior radius of the front leg of the coil contacts the support tab).

Regarding claim 11, Chang et al disclose:

The actuator of claim 8, wherein the primary legs are longer than the secondary legs (figure 7, front secondary leg is shorter than the side primary legs).

Regarding claims 12 and 13, Chang et al disclose:

The actuator of claim 1, wherein the coil is attached to the support tab (figure 7, via adhesive [232]) with an adhesive (figure 7, item 232).

Regarding claims 14 and 15, Chang et al disclose:

The actuator of claim 1, wherein the coil is attached to the support extensions with an adhesive (figure 7, via adhesive [228 & 230]).

Regarding claim 16, Chang et al disclose:

The actuator of claim 1, wherein the support extensions extend from the main body section along the horizontal plane (figure 7, support extensions are along horizontal plane).

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over McReynolds et al (US Patent Number 6687095), in view of Hong et al (US Patent Number 6775105).

Regarding claims 1, 4, McReynolds et al disclose:

A disk drive comprising:

An actuator rotatably coupled (figure 1, arrow 122) to the disk drive base (figure 1, item 102), the actuator comprising:

An actuator body formed of an integrated stamped material (column 3, lines 12-19), actuator body including:

A main body section (figure 2, item 220) defining a horizontal plane orthogonal to an axis of rotation (figure 2, item 220 is orthogonal to axis of rotation);

An actuator arm extending from the main body section (figure 1, item 114);

Two support extensions (figure 2, items 224 & 232) extending from the main body section opposite the actuator arm, the support extensions cooperatively forming a channel between the support extensions (figure 2, channel between extensions); and

A coil support tab disposed adjacent the support extensions and extending orthogonal to the horizontal plane (figure 2, item 226).

McReynolds et al fails to specifically disclose:

Two parallel support extensions; and

A vertical coil defining a coil plane disposed orthogonal to the horizontal plane, the coil being disposed in mechanical communication with the support extensions and the coil support tab for supporting the coil within the channel.

Hong et al disclose:

Two parallel support extensions (figure 6, items 40 are parallel); and

A vertical coil defining a coil plane disposed orthogonal to the horizontal plane (figure 6, item 42), the coil being disposed in mechanical communication with the support extensions and the coil support tab for supporting the coil within the channel (figure 6, item 40 supports the coil).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide McReynolds et al with a vertical coil and parallel support portions, as taught by Hong et al, because a vertical coil of a VCM is a well known equivalent in the art. Moreover, by making McReynolds et al's coil of the form of Hong et al's, the voice coil would be in communication with the tabs, as shown by McReynolds et al in figure 4.

Regarding claim 2, McReynolds et al fails to specifically disclose:

Wherein the actuator body is formed of a single integrated piece of material.

Hong et al disclose:

Wherein the actuator body is formed of a single integrated piece of material (figure 6, item 26 is one piece).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the actuator body of McReynolds et al out of a single integrated piece, as taught by Hong et al, because this would make assembly easier.

Regarding claim 3, McReynolds et al disclose:

The actuator of claim 1, wherein the coil support tab is integrally formed with the main body section (column 3, lines 31-34).

Regarding claim 5, McReynolds et al disclose:

The actuator of claim 1, wherein the actuator body is formed of a sheet metal material (column 3, lines 12-19).

Regarding claim 6, McReynolds et al disclose:

The actuator of claim 1, wherein the coil support tab extends from the main body section (figures 2 & 3).

Regarding claim 7, McReynolds et al disclose:

The actuator of claim 1, wherein the coil support tab is disposed between the support extensions (figures 2 & 3).

Regarding claim 8, McReynolds et al disclose:

The actuator of claim 1, wherein the coil support tab is bent from a position between the support extensions within the horizontal plane (column 3, lines 30-33).

Regarding claim 9, McReynolds et al disclose the features of base claim 1 as stated in the 103 rejection above, but fails to specifically disclose:

Wherein the coil includes a pair of opposing primary legs and pair of opposing secondary legs respectively disposed between the primary legs, a respective one of the primary legs is disposed in mechanical communication with the support extensions within the channel, a respective one of the secondary legs is disposed in mechanical communication with the coil support tab.

Hong et al disclose:

Wherein the coil includes a pair of opposing primary legs (figure 3, items 94 & 95) and pair of opposing secondary legs respectively disposed between the primary legs (figure 3, items 92 & hidden item 93), a respective one of the primary legs is disposed in mechanical communication with the support extensions within the channel (figure 3, item 94 contacts item 116).

Hong et al fails to specifically disclose:

A respective one of the secondary legs is disposed in mechanical communication with the coil support tab.

However, the combination from claim 1, of providing for the coil of McReynolds to be vertical between parallel supports, as disclosed by Hong et al, would have provided for the two parallel supports and the connecting edge of 116 between the two parallel supports with a tab for supporting the coil. Therefore, a secondary leg of the coil would be in mechanical communication with the coil. Therefore, claim 9 is further rejected by the combination of McReynolds et al and Hong et al.

Regarding claim 10, McReynolds et al and Hong et al disclose the features of base claim 8 as noted in the 103 rejection above, but fail to specifically disclose:

Wherein the respective one of the secondary legs includes a radially exterior surface disposed in mechanical communication with coil support tab.

However, the combination from claim 1, of providing for the coil of McReynolds to be vertical between parallel supports, as disclosed by Hong et al, would have provided for the two parallel supports and the connecting edge of [116] between the two parallel supports with a tab for supporting the coil. Therefore, a secondary leg of the coil would be in mechanical communication with the coil. Furthermore, the parallel support contacts the coil only in an exterior surface, so, by providing the parallel supports with a vertically extending support tab, inevitable, a secondary leg of the coil would be in communication on an exterior radial surface with the support tab. Therefore, claim 10 is further rejected by the combination of McReynolds et al and Hong et al.

Regarding claim 11, McReynolds et al and Hong et al disclose the features of base claim 8 as stated in the 103 rejection above, Hong et al further disclosing:

Wherein the primary legs are longer than the secondary legs (figure 9, primary legs [94 & 95] are longer than secondary legs [92 & hidden 93]).

Regarding claims 12 and 13, McReynolds et al disclose:

Wherein the coil is attached to the support tab with an adhesive (column 3, lines 51-60).

Regarding claims 14 and 15, McReynolds et al disclose:

Wherein the coil is attached to the support extensions with an adhesive (column 3, lines 51-60).

Regarding claim 16, McReynolds et al disclose:

Wherein the support extensions extend from the main body section along the horizontal plane (figure 2, support extensions extend along horizontal plane).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew G. Kayrish whose telephone number is 571-272-4220. The examiner can normally be reached on 8am - 5pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for


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published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew G. Kayrish

3/20/2007

MK


3/20/07
WAYNE YOUNG
SUPERVISORY PATENT EXAMINER